

AMENDMENTS TO THE DRAWINGS:

* Attached are eight (8) replacement sheets to replace the six (6) sheets of drawings currently of record.

Fig. 2 has been amended to add a lead line from reference number 66 in the upper left hand corner to the corresponding structure.

Fig. 3 has been amended to delete reference number 78 and the lead line corresponding thereto.

Figs. 6 and 7 have been amended to replace the text with reference numbers.

Figs. 8, 9a and 9b are added herein. All of the drawings have been amended to change the sheet numbers in correspondence with the addition of the new drawing sheets.

REMARKS

Claims 28, 33, 35, 40, and 42 are amended herein. Claims 3, 9, 28, 30, 31, 33-37, and 40-43 are currently pending and claims 2, 4, 5, 8, 11, 14, 16, 17, 20 and 21 remain withdrawn from consideration.

The following remarks are responsive to the Office action dated February 22, 2005.

II. Response to Objection to Drawings

Figures 2 and 3 have been amended in response to the objections raised in paragraphs 5 and 7, respectively, of the Office action.

Figures 8, 9a and 9b have been added herein to show certain features recited in the claims as required in paragraph 6 of the Office action. More particularly, Fig. 8 has been added to illustrate one of the loop fasteners 84, 85 as comprising an oriented nonwoven loop material secured to a substrate. Support for the added drawing can be found at least at page 23, lines 23-27 and in the claims of the application as originally filed.

Figure 9a has been added to show the general orientation of the constituent fibers of the nonwoven web prior to tensioning thereof to orient the fibers. Figure 9b has been added to show the general orientation of the constituent fibers of the nonwoven web after tensioning thereof. As can be seen, upon tensioning of the web more of the constituent fibers become oriented in the general direction of tension than prior to tensioning of the web to thereby define the oriented web. Support for adding Figs. 9a and 9b can be found at least at page 9, lines 16-18; page 27, line 8 to page 28, line 20; and the claims of the application as originally filed.

Figures 6 and 7 are amended to replace the text references to numerical references.

The amendments made to Figs. 2 and 3 and the addition of Figs. 8, 9a and 9b are submitted to place the drawings in proper form. The oriented nonwoven loop material and substrate as recited in the claims are now shown in the drawings.

III. Response to Objections to the Specification

In response to paragraph 7 of the Office action, Figure 3 is amended to delete reference numeral 78.

With respect to the Office's position regarding the term "oriented material", the definition of "oriented material" as previously set forth on page 9 at lines 16-18 of the specification has been deleted herein and has been replaced with a definition for the term "oriented nonwoven loop material". Support for the deletion of the definition for "oriented material" and the addition of the definition for "oriented nonwoven loop material" is found in the originally filed specification.

With respect to the deletion of the definition of the term "oriented material", it is clearly apparent from the Examiner's rejections and objections set forth in the Office action that the definition of "oriented material" was a source of confusion to the Examiner. For example, nowhere in the specification does the oriented material explicitly or inherently require that "all the fibers" constituting the material are oriented in a direction generally parallel to the direction of the applied force. Nevertheless this is the position asserted by the Examiner based on the definition of term "oriented material". In fact, the specification indicates to one of ordinary skill in the art that it is not necessary for all the fibers to be

oriented in the direction of the applied but only at least a portion of the fibers.

One skilled in the art understands that a nonwoven web of fibers described in the present application has a generally random fiber orientation upon initial formation (e.g., in the configuration of the web prior to being drawn or tensioned). Thus, some of the fibers will already be aligned in the direction in which the web is to be drawn, and other fibers will be aligned perpendicular to (both laterally and vertically) the direction of draw. Many of the fibers will extend in directions including in part the direction in which the web is to be drawn.

Thus, upon drawing or otherwise applying force to the web to tension the web in the direction of draw, fibers that already extend in part in the direction of draw will become more oriented in the direction of draw. However, it is readily understood that fibers that start out perpendicular to the direction of draw (or close to perpendicular thereto) may not extend parallel to the direction of draw. In fact, some may not be reoriented at all upon extension of the web. Thus, the term "oriented material" as used in the present application never required that all of the fibers must be oriented in the direction of draw. Rather, the material was drawn (e.g., tensioned) in such a manner that at least more fibers than were previously oriented in the direction of draw become oriented in the direction of draw.

Support for the above position regarding the meaning of "oriented material" is provided throughout the specification including at page 28, lines 21-23 wherein U.S. Patent No. 4,965,122 is incorporated by reference. The incorporated reference discloses a suitable nonwoven web and illustrates the web at Fig. 6 thereof prior to extension and at Fig. 5 thereof

following extension wherein more fibers (but far less than all of the fibers) have become oriented in the direction of draw. Nothing in the application or claims requires that all of the fibers of the web become oriented in the direction of draw.

At page 27, lines 11-13, the present application also notes that fibers become oriented more in the machine direction (direction of draw) than in the cross-machine direction, not that the fibers are all strictly parallel with the machine direction. Thus, the web is oriented as long as it is tensioned from its initial configuration and upon extension of the web the fibers become more oriented in the direction of draw than when the web is untensioned.

In support of adding the definition of "oriented nonwoven loop material", a declaration by Debra Durrance, one of the inventors of the present invention, is submitted herewith. In paragraph 4 of the declaration, Ms. Durrance states that one of ordinary skill in the art would have understood at the time of the invention of the present application the term "oriented nonwoven loop material" to mean a web comprising fibers or filaments that is formed other than by weaving or knitting. The fibers in the web have a generally random orientation except that more of the fibers are generally parallel to a direction corresponding to a direction of force previously applied to the web. The orientation of the fibers would not be understood to be exclusively in the force direction or to be precisely parallel to the force direction. Figures 9a and 9b illustrate an oriented nonwoven loop material before and after a force are applied to the web to orient the web fibers. Figure 9a shows the general orientation of the fibers of the web before a force is applied thereto. Figure 9b, on the other hand, shows the general orientation of the fibers of the web after the force has

been applied. As illustrated, more of the web fibers are oriented in a direction generally parallel to the direction of the applied force than before the force was applied to the web.

The claims of the originally filed specification provide further support for the added definition of "oriented nonwoven loop material" and for the declaration of Ms. Durrance. Original claim 1, for example, recited in part an "oriented nonwoven loop material comprising a nonwoven web and produced by application of a force causing constituent fibers of the nonwoven web to become oriented in a direction of the applied force without substantial necking or gathering of the nonwoven web in a direction perpendicular to the applied force".

Original claim 6 recited, in part, an "oriented nonwoven loop material comprising a nonwoven web and produced by application of a force causing constituent fibers of the nonwoven web to become oriented in a direction of the applied force".

Original claim 12 recited, in part, an "oriented nonwoven loop material produced by application of a force causing constituent fibers of the nonwoven web to become oriented in a direction of the applied force without substantial necking or gathering of the nonwoven web in a direction perpendicular to the applied force".

Original claim 15 recited in part an "oriented nonwoven loop material produced by application of a force causing constituent fibers of the nonwoven web to become oriented in a direction of the applied force".

Original claim 22 was directed to a method of making a mechanical fastening system for an article comprising forming an oriented nonwoven loop material from a nonwoven web of substantially continuous fibers by drawing the nonwoven web

using an applied force to align constituent fibers of the nonwoven web without substantial necking or gathering of the nonwoven web in a direction perpendicular to the applied force.

Original claim 24 was directed to a method of making a mechanical fastening system for an article comprising forming an oriented nonwoven loop material from a nonwoven web of substantially continuous fibers by drawing the nonwoven web using an applied force to align the constituent fibers of the nonwoven web.

Original claim 26 was directed to a method of making a mechanical fastening system for an article comprising forming an oriented nonwoven loop material from a nonwoven web of substantially continuous fibers by drawing the nonwoven web using an applied force to align the constituent fibers of the nonwoven web.

Accordingly, the Examiner's position with regard to the meaning of "oriented material" is simply not supported by the specification as properly understood by a person of ordinary skill in the art. As a result, applicants have deleted the term "oriented material" and have replaced it with the definition of the claimed "oriented nonwoven loop material" that corresponds to the language of the claims.

IV. Response to Claim Objections

Claims 35, 40, and 42 has been amended herein to obviate the objections to claims 35 and 40-43 as set forth in paragraph 8 of the Office action. Particularly, the phrase "in combination with the article" has been deleted from claim 35 as suggested by the Examiner, and claims 40 and 42 have been amended herein to delete any apparent redundant recitations.

V. Response to Claim Rejections Under 35 U.S.C §112

The rejection of claims 28, 33, 40 and 42 regarding the number of fibers at a minimum required to be oriented, and the manner and time of orientation is in error and should be withdrawn. A statement as to why someone of ordinary skill in the art would not understand the answers to these questions or need to know them in order to make and use the claimed invention is not given making response to the rejection difficult. The specification clearly explains how to make the claimed invention. No count of oriented fibers is given beyond an understanding that more are oriented in the direction a force is applied to the web of fibers than prior to application of that force. That is more than sufficient to make the claim clear without a fiber count. The time of orientation is irrelevant except to the extent that the claims require them to be so oriented to fall within the scope of the claim. The manner of orientation (e.g., by drawing, extending or tensioning) is painstakingly set forth in the claims as well as in the specification. A force is applied to the loop material to produce the orientation of the fibers. There can be no unclarity in that regard. Specifically, claims 28 and 33 say that the material is extended by force in a selected direction to produce the orientation.

The claims as now presented are therefore submitted to satisfy all of the requirements of 35 USC §112.

VI. Response to Rejection of Claims under 35 USC §102/103

Claim 28

Claim 28, as amended, is directed to a mechanical fastening system for an article in which one of the fastening components of the fastening system comprises an oriented nonwoven loop material. The oriented nonwoven loop material comprises a nonwoven web of fibers in which a greater number of fibers are oriented in a selected direction by the application of a force in the selected direction to extend the web.

Claim 28 stands rejected on the basis of EP 0 289 198 (Noel et al.) and WO 97/25893 (Weirich et al.) because the Examiner ignored the previously recited requirement for a nonwoven loop material comprising a nonwoven web of fibers which is applied to a substrate in an extended configuration wherein a greater number of fibers of the nonwoven loop material extend in the direction in which the web is extended than in the relaxed configuration of the web. The reason for ignoring the requirement is the Examiner's conclusion that claim 28 is a product by process claim, or more particularly, that the above noted requirement is a process limitation. (Office action of 2/22/05, p. 8). This position is incorrect. Nevertheless, claim 28 has been amended herein to now recite that "the oriented nonwoven loop material comprises a nonwoven web of fibers in which a greater number of fibers are oriented in a selected direction by the application of a force in the selected direction to extend the web".

Where the claim term is expected to impart a distinctive structural characteristic, it should be considered a structural limitation even if couched in language that would implicate a particular manufacturing process. *In re Granero*, 162 U.S.P.Q.

221, 223 (CCPA 1979). In *Granero*, the claim was directed to "a composite" having among other things, "expanded perlite particles which are **interbonded one to another by the interfusion between the surfaces of the perlite particles while in a pyroplastic state to form a porous perlite panel.**" *Id.* at 222 (emphasis added). In rejecting the claim, the Patent Office took the position that the bolded language was a process limitation, and that this language was the only thing that distinguished the claim from the prior art.

The court rejected this position stating:

"The trouble with the [Patent Office's] approach is that it necessarily assumes that claim 1 should be construed as a product claim containing a process, rather than structural limitation. However, it seems to us that the recitation of the particles as 'interbonded one to another by the interfusion between the surfaces of the perlite particles' is as capable of being construed as a structural limitation as 'intermixed,' 'ground in place,' 'press fitted,' 'etched,' and 'welded,' all of which at one time or another have been separately held capable of construction as structural rather than process, limitations." *In re Granero*, at 223.

The Court went on to say that the correct approach was to determine whether the prior art showed expanded perlite particles . . . interbonded one to another by interfusion between the surfaces of the perlite particles. *Id.* In other words, the claim was not to be treated as a product by process claim, but rather a product claim including the quoted structural limitation.

The approach mandated by *In re Granero* is the proper approach to the present application. The term "a greater number of fibers are oriented in a selected direction by the application of a force in the selected direction to extend the web" imparts a structural characteristic and should be treated as a structural, not a process, limitation. These terms are at least as clearly structural as the terms "interbonded . . . by interfusion", "intermixed," "ground in place," "press fitted," "etched," and "welded", terms that have previously been found to impart a structural characteristic. Moreover, MPEP §2173.05(g) requires that functional language in a claim "must be evaluated and considered, just like any other limitation of the claim for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used." The language the Examiner identifies as being process, is more akin to a functional description and must be given weight according to MPEP §2173.05(g).

If amended claim 28 is read for what it fairly conveys to one of ordinary skill in the art, including that recitation that a greater number of fibers are oriented in a selected direction by the application of a force in the selected direction to extend the web, amended claim 28 clearly distinguishes the art of record.

Noel et al. disclose a loop fastening material comprising a backing (22) of orientable material (defined by Noel et al. as a web that has a dimensionally unstable state; see column 4, lines 6-14), preferably a heat shrinking material, and a multiplicity of fibrous elements (28) extending outward from the backing (22). The fibrous elements (28) are intermittently secured to the backing (22) at spaced, fixed regions (32) along the length of each filament while the orientable backing is in an unstable

state. Upon movement back to the stable state of the backing, the fibrous material is shirred (i.e., gathered) to form loops that can be connected to a hook material (52). In one embodiment, the backing is a heat shrinkable material and in another embodiment the backing is an elastomeric material.

Noel et al. lack any disclosure that the fibrous elements (28) are oriented in a selected direction by the application of a force in the selected direction to extend the web. The filaments (30) of the fibrous elements (28) are explicitly stated to be "untensioned" as applied to the substrate (22). (Noel et al., col. 6, ll. 28-32). Rather than the filaments (30), it is the backing (22) that is an unstable (e.g., shrinkable or stretched) condition when the fibrous elements are secured to the backing. *Id.* As a result, shirring of the fibrous elements (28) occurs when the backing moves to its stable condition. (Compare Fig. 3 to Fig. 2 of Noel et al.). Moreover no extension of any web of fibers in Noel et al. produces any particular orientation of the fibers.

In contrast, the nonwoven web of fibers of the loop material of applicants' first fastening component as recited in amended claim 28 has a greater number of fibers oriented in a selected direction by the application of a force in the selected direction to extend the web.

The Examiner incorrectly describes Noel et al. and misapplies it to the claimed invention. The action confuses the backing (22) of Noel et al. with the fibrous material (28). The action cites a number of sections of Noel et al. and concludes that these disclose "the mechanical fastening system is 50 and has a first fastening component 20 of oriented nonwoven loop material 30 attached to a substrate e.g., 22".

Nowhere is there support for the position that Noel et al. discloses oriented nonwoven loop material. Noel et al. explains that its backing (22) (i.e., NOT the fibrous material (28)) is an "orientable material". However, Noel et al. uses the term "orientable material" to mean a material "having a dimensionally unstable state that is later transformed to its dimensionally stable state" (col. 3, ll. 38-41). There is no disclosure or suggestion that fibers in the backing become oriented upon extension, as is disclosed in by the present application. The fibrous elements (28) constitute the loop material. The fibrous elements (28) and the filaments (30) making up the fibrous elements are nowhere described in Noel et al. as being "oriented nonwoven loop material" as asserted by the Examiner.

In support of her position, the Examiner cites (among other passages) column 6, lines 28-36 at which Noel et al. disclose that the filaments (30) are preferably positioned on the backing (22) while the orientable material of the backing is in its heat unstable state "and while the filaments 30 are in an untensioned condition" Similar disclosure can be found at column 9, lines 10-17. The filaments (30) are untensioned when applied to the backing (22), and further they are compressed (shirred) when the backing moves to a stable condition.

It is not understood how in the face of an explicit disclosure in Noel et al. that the filaments are **not** tensioned that the Examiner can find that tensioning is disclosed. Not even by any possible negative implication of these explicit statements can one conclude that tensioning of the filaments (30) is disclosed or even remotely suggested. Loops are formed by Noel et al. through compression of the filaments so that they buckle upward to form loops. In sharp contrast, applicants use the fibers forming the web material as the loops. The loops

exist before any manipulation of the web. Extension of the web of fibers produces a particular orientation of the fibers that improves interengagement of the hooks with the fiber loops.

Weirich et al. disclose a female component of a refastenable fastening device. The female component comprises an elastomeric adhesive backing (34) and a multiplicity of fibrous elements (30) extending from the backing. Weirich et al. disclose that the multiplicity of fibrous elements (30) may be a nonwoven web. According to Weirich et al., the female component is formed by securing the nonwoven web (30) to the elastomeric backing (34) while the backing is elongated so that when the backing is allowed to return to a relaxed state the nonwoven web is shirred (i.e., gathered). Nowhere do Weirich et al. disclose or even suggest that the nonwoven web (30) is extensible. Weirich et al. also do not teach that the nonwoven web the fibers in the web are oriented by extending the web. Rather, as disclosed at page 8, lines 17-19 of Weirich et al., the filaments (36) of the nonwoven web (30) are in an untensioned state when they are joined to the elongated backing (34).

Thus, Weirich et al. lack the same teachings as Noel et al. lack. In fact, the passages of Weirich et al. relied upon by the Office in support of its position (e.g., page 15, lines 13 et seq.) are substantially the same as that of Noel et al. That is, Weirich et al. teach that the filaments (36) could conceivably be in a tensioned condition. However, as discussed above, the term tensioned does not explicitly mean that the filaments are actually extended. Moreover, it is not inherent that the filaments are extended simply because they could conceivably be tensioned. For example, they may only be pulled taut and may even be inextensible. Finally, whether these

filaments are tensioned are not, there is no teaching or suggestion that the tension produces an orientation in the direction of tension.

Thus, as was the case with Noel et al, Weirich et al. fail to show or suggest a nonwoven loop material comprising a nonwoven web of fibers in which a greater number of fibers are oriented in a selected direction by the application of a force in the selected direction to extend the web as recited in amended claim 28. Consequently, neither Noel et al. nor Weirich et al. anticipates or renders obvious claim 28.

For these reasons, amended claim 28 is submitted to be patentable over Noel et al., Weirich et al. and the other references of record.

Claims 3, 9 and 30-32, depending directly or indirectly from amended claim 28, are submitted as novel and patentable over Noel et al. for the same reasons as claim 28.

Claim 33

Amended claim 33 includes the same requirement argued above for amended claim 28. Accordingly, claim 33 is submitted as novel and patentable over Noel et al. and Weirich et al. for the same reasons as claim 28. Claims 34-47, depending directly or indirectly from amended claim 33, are submitted as novel and patentable over Noel et al. and Weirich et al. for the same reasons as claim 33.

Claims 40

Amended claim 40 is directed to a mechanical fastening system for an article, said fastening system comprising:

a first fastening component comprising *a loop material formed by a nonwoven web of fibers, the fibers in the nonwoven web being oriented by drawing of the nonwoven web of fibers in a direction so that more of the fibers are oriented in the direction of drawing than prior to drawing of the nonwoven web of fibers*; and

a second fastening component comprising a hook material, the oriented nonwoven loop material of the first fastening component being adapted for releasable connection with the hook material of the second fastening component.

Amended claim 40 is submitted as patentable in that none of the references of record, including Noel et al. and Weirich et al., show or suggest a mechanical fastening system including a loop material formed by a nonwoven web of fibers, the fibers in the nonwoven web being oriented by drawing of the nonwoven web of fibers in a direction so that more of the fibers are oriented in the direction of drawing than prior to drawing of the nonwoven web of fibers.

The requirement for the loop material to be oriented by drawing must be given weight as a structural limitation of amended claim 40 for the same reasons as given for giving the requirement for "a greater number of fibers are oriented in a selected direction by the application of a force in the selected direction to extend the web" in amended claim 28 as argued above. Noel et al. and Weirich et al. fail to show or suggest loop material being oriented by drawing as required by amended claim 40. Claim 41 depends from claim 40 and is patentable for the same reasons as claim 40.

Claims 42

Amended claim 42 is directed to a mechanical fastening system for an article, said fastening system comprising:

a first fastening component comprising *a loop material formed by a nonwoven web of fibers, the fibers in the nonwoven web being oriented by application of force to the nonwoven web of fibers in a direction so that more of the fibers are oriented in the direction of force than prior to applying a force to the nonwoven web of fibers*; and

a second fastening component comprising a hook material, the oriented nonwoven loop material of the first fastening component being adapted for releasable connection with the hook material of the second fastening component.

Amended claim 42 is patentable over the reference of record for substantially the same reasons as set forth above with respect to claim 40. That is none of the references of record, including Noel et al. and Weirich et al., show or suggest a mechanical fastening system including a loop material formed by a nonwoven web of fibers, the fibers in the nonwoven web being oriented by application of force to the nonwoven web of fibers in a direction so that more of the fibers are oriented in the direction of force than prior applying a force to the nonwoven web of fibers.

CONCLUSION

In view of the above, reconsideration and allowance of claims 3, 9, 28, 30, 31, 33-37, and 40-43 is requested.

* A check in the amount of \$120 is enclosed in payment of the one month extension of time to respond to the Office Action. The Commissioner is requested to charge any fee deficiency or credit any overpayment in connection with this amendment to Deposit Account No. 19-1345.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Kurt F. James", with a long horizontal flourish extending to the right.

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